

WHAT IS CLAIMED IS:

1. A method for regulating traffic in a network, comprising:
2. making unavailable an amount of network transmission capacity as reserve
3. capacity; and
4. adjusting the amount of reserve capacity based on a desired network
5. performance.
1. 2. The method of claim 1, wherein the making unavailable comprises
2. blocking end-users from gaining access to the network by asserting a traffic regulation
3. signal in a channel of the network.
1. 3. The method of claim 2, wherein the traffic regulation signal blocks all
2. end-users or end-users of a specific class, the class being defined by one or more of
3. priority, quality of service, or privilege.
1. 4. The method of claim 2, wherein the network has a protocol controlling
2. access to the network, the traffic regulation signal being consistent with the protocol.
1. 5. The method of claim 4, wherein the protocol uses one of in-band signals,
2. out-of-band signals or independent channel signals to control access to the network.
1. 6. The method of claim 1, wherein the adjusting comprises:
2. monitoring an amount of unused capacity of the network; and
3. asserting a traffic regulation signal in the network if the amount of unused
4. capacity is less than a desired amount.
1. 7. The method of claim 6, wherein the monitoring is performed by media
2. access controllers (MACs) for each media of the network that requires access control, the
3. media access controllers controlling a local reserve capacity of each respective media
4. based on system parameters and monitoring data generated by each of the MACs.
1. 8. The method of claim 7, further comprising:
2. exchanging the monitoring data among the MACs; and
3. asserting the traffic regulation signals in each of the media to achieve
4. network performance requirements.
1. 9. The method of claim 7, wherein a central traffic regulation controller
2. controls network traffic regulation, the method further comprising:

3 receiving in the central traffic regulation controller the monitoring data
4 generated by the MACs; and

5 issuing traffic regulation commands from the central traffic regulation
6 controller to the MACs to regulate traffic in each of the media to achieve network
7 performance requirements.

1 10. The method of claim 7, wherein each of the MACs is one of a dedicated
2 media access controller or an end-user that includes a media access function.

1 11. A network traffic regulation system, comprising:
2 a network that includes media; and
3 ^{medium} media access controllers (MACs); each of the MACs controlling one or
4 more media of the network, each of the MACs making unavailable an amount of media
5 transmission capacity as reserve capacity, and adjusting the amount of reserve capacity
6 based on a desired network performance.

1 12. The method of claim 10, wherein the making unavailable comprises
2 blocking end-users from gaining access to the network by asserting a traffic regulation
3 signal in a channel of the media controlled by each of the MACs.

1 13. The method of claim 12, wherein the traffic regulation signal blocks all
2 end-users of the media or end-users of a specific class of the media, the class being
3 defined by one or more of priority, quality of service, or privilege.

1 14. The method of claim 12, wherein the media has a protocol controlling
2 access to the network, the traffic regulation signal being consistent with the protocol.

1 15. The method of claim 14, wherein the protocol uses one of in-band signals,
2 out-of-band signals or independent channel signals to control access to the media.

1 16. The method of claim 11, wherein each of the MACs monitors an amount
2 of unused capacity of a media controlled by each of the MACs, and asserts a traffic
3 regulation signal in the media if the amount of unused capacity is less than a desired
4 amount.

1 17. The method of claim 16, wherein each of the MACs controls a local
2 reserve capacity based on system parameters and monitoring data generated by one or
3 more of the MACs.

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1 18. The method of claim 17, wherein each of the MACs exchanges the
2 monitoring data with other one of the MACs and asserts the traffic regulation signals in
3 each of the media to achieve network performance requirements.

1 19. The method of claim 17, further comprising a central traffic regulation
2 controller that controls network traffic regulation, the central traffic regulation controller
3 receives the monitoring data generated by the MACs, and issues traffic regulation
4 commands to the MACs to regulate traffic in each of the media to achieve network
5 performance requirements.

1 20. The method of claim 17, wherein each of the MACs is one of a dedicated
2 media access controller or an end-user that includes a media access function.

662217-2012-0050